

## ABSTRACT

With the projected growth of cardiovascular disease (CVD) cases in Indonesia reaching 6 million by 2024, methods of monitoring people with the potential of developing CVD are required. This importance increases with the age of patients due to the increased possibility of developing cardiac risk factors (Rodgers et al., 2019). One of several CVD needed to be monitored is Atrial Fibrillation (AFib). AFIB is one of the most common CVD occurring in the elderly, with the patient possibly developing stroke or heart failure (Ahmed & Zhu, 2020; Díez-Villanueva & Alfonso, 2019; Letsas et al., 2015). Therefore an accurate method for AFib identification and monitoring is required. An electrocardiogram (ECG) has been the most accurate initial screening tool for CVD, including AFib. However, the apparatus involves the presence of health professionals on-site for machine use and interpretation. The presence of noise in the ECG monitor may occur during movement. These factors prevent conventional ECG from being a constant monitoring tool for CVD patients (Sattar & Chhabra, 2021). Therefore, an AFib indication algorithm has been developed through average R-R interval and R-R interval frequency frame comparison using SciPy and NeuroKit2 in Python. The algorithm was validated with data available from Physionet's MIT-BIH Arrhythmia Database (mitdb) database and resulted in a varying percentage of accuracy, sensitivity, and specificity. Overall, the algorithm shows several problems needed to be considered in developing a diagnostic algorithm based on R peak detection.

*Keywords:* Atrial Fibrillation; Electrocardiogram; R-Peak; Python